Preventive medicine for communications breakdowns

When the Centers for Disease Control and Prevention (CDC) in Atlanta established its state-of-the-art Marcus Emergency Operations Center (EOC), it wasn't about to take chances with communications. As the control-and-coordination hub for epidemic outbreaks, the EOC is the new nerve center for early detection of public health emergencies. Which is why the CDC made satellite communications from Mobile Satellite Ventures (MSV) part of the EOC's communications infrastructure.

The EOC can use satellite voice and dispatch radio to communicate with front-line field staff and other government agencies and officials—anywhere on the continent. And it can count on MSV services when land-based communications are unavailable. MSV satellite communications is another tool in the fight against public health emergencies.
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New CDC Emergency Operations Center Relies on the Redundancy of Satellite to Be Prepared

Inside the Centers for Disease Control and Prevention's (CDC)'s new state-of-the-art Marcus Emergency Operations Center (EOC), the Watch Team handles incoming calls from doctors, state and local public health departments and scores of other groups. They are the front lines of the nation's early detection of public health emergencies. On this particular day in October 2003, the Center was operating in an alert mode. The threat level, set by the Department of Homeland Security, was at Elevated—a normal setting in today's post 9-11 environment.

Bonnie Marcinkiewicz, a specialist on the Watch Staff, remembers a different level of activity in April 2003. That's because the Severe Acute Respiratory Syndrome or SARS epidemic, a mystery illness that first emerged in Asia, had begun to spread to the U.S. and Canada.

"We average 3,000 calls per month normally. But, back in April we handled 9,000 calls in one month. Four of us were here 24 x 7 during the SARS epidemic," recalled Marcinkiewicz.

Without question, the new Marcus EOC is already making a major difference in the preparedness of the nation's premier public health agency. And technology, including satellite-based dispatch radio and voice services from Mobile Satellite Ventures (MSV) and Liberty Communications, is playing an important role in helping the Center serve as a control-and-coordination hub for epidemic outbreaks and other public health emergencies.

The need for a coordinated agency-wide EOC emerged with CDC's growing role following Sept. 11th and the anthrax attacks through the U.S. mail. Besides the urgency to strengthen the country's early detection of potential bioterrorism incidents, CDC also must be able to quickly respond to the emergence of public health threats such as West Nile Virus, Monkey Pox and SARS.

"With 9/11 and Anthrax, we saw a need to centralize and integrate information. We recognized that you have to institutionalize the process and put together a formalized approach, which is the genesis behind this Center," explains David DeSantis, the Information Technology and Information Management Lead for the Operations Branch, for the Marcus EOC.

The EOC will help CDC track and respond faster to emerging threats while ensuring that the agency continues to makes an impact in public health. The EOC interim facility opened in January 2003 with private-sector support from The Marcus Foundation, Inc. Eventually, it will be housed in CDC's new headquarters building in Atlanta. The Center already provides 24 x 7 coverage and has the ability to staff up to more than 100 people in the event of a crisis.

The EOC, which also works with the federal government's Strategic National Stockpile operational cell, has people with the right expertise across medical, military and aviation.

The Center is equipped with the latest in communications technologies, including high frequency (HF) radio, wireless and satellite as well as an independent power supply and back-up generator. If telecommunications landlines are interrupted, power and telecom maintenance crews in the City of Atlanta know EOC is one of the first government facilities to be serviced because of its emergency nature.

"Redundancy is critical—you never know what is going to happen so you have to have back up to the back up," said Bill Kruse, program manager within the EOC, who has 25 years experience in the medical-operations field, including serving as a regional vice president of operations for American Medical Response (AMR) Inc., the nation's largest provider of medical transportation. In 1995, he was CEO for AMR's Oklahoma Operations and ran the EMS response after the Murrah building was bombed.

For Kruse and the other managers at the EOC, redundancy in the voice and data communications is critical to the Center's function. MSV's satellite link in particular plays a special role by serving as the means to communicate with the Department of Health and Human Services (HHS) Secretary's Command Center in Washington, D.C.

"During the SARS epidemic, communication with the Secretary's Command Center was extensive; therefore, back-up satellite comms capability was essential," said Kruse. "It is most imperative for us to communicate with our own team members who are deployed and with the Secretary's Command Center."

A key feature of MSV's dispatch radio service is the interoperability with other agencies through the use of talkgroups. Any MSV terminal can have up to 15 different talkgroups. This feature allows the CDC to manage their satellite communications internally and across a variety of agencies. CDC, which participated in talkgroups with Federal Emergency Management Agency (FEMA) and HHS, views it as one of the best ways to achieve cross-agency interoperability when responding to domestic crises.

MSV's dispatch radio phones also are part of CDC's tactical packs that can be deployed in the field. The packs feature a local area network, an HF radio, a digital camera, a printer, a cell phone and a satellite phone.

"The tactical packs are really targeted to remote areas. They are very useful when you are in a remote area and have to spread people out," said DeSantis. "You have the ability to have everyone communicate back, which is very good; it's like having a two-way walkie talkie wherever you go."

CDC has not yet had to deploy the packs in a real-world emergency. But, the agency has deployed the packs to the field for exercises, the most recent being Determine Promise held in a remote part of Nevada in July. The satellite capability is tested daily inside the EOC itself.

"Every single time we test our satellite capability, it works. It's a critical tool," said DeSantis.

The communication requirements of federal, state and local public health agencies are essential. These agencies should rely on several communication paths, including video conferencing, HF radio and satellite communications, to connect into the CDC EOC. In this way, CDC and its local partners can appropriately deal with all potential health threats.

"The Center is on the threshold of becoming a complete integrator and content owner of information on which to make public health decisions," Kruse says. "In the case of disease, success is really built on your ability to communicate rapidly and effectively."

Both Kruse and DeSantis agree that being prepared is what it is all about and that's why the Center's communications systems have double and even triple redundancy.

"Having reliable voice and data communications is a large majority of the battle. If you can send and receive data and voice, then you are in business," said DeSantis.